

Sparkwell Primary

Design Technology Curriculum Plan

Our curriculum statements are designed to be used as a supportive tool to plan teaching and learning across our school. The key skills are derived from the National Curriculum and spilt into individual year groups to support a progressive approach and mixed age classes.

The concept of future and innovation underpins our design and technology curriculum - we want pupils to view themselves as designers: risk taking, trialling, and evaluating sitting centrally to their experience. Pupils are encouraged to exercise their creativity through our designing, making and evaluating cycle. Combining designing and making skills with knowledge and understanding ensures pupils have a rounded, progressive experience and provides skills that can be drawn upon for life. Evaluation is an integral part of the design process, allowing children to improve and adapt their product and providing a platform to build and practice resilience. Capturing pupil interests and providing cross-curricular opportunities to embed D&T develops motivation and embeds understanding in a meaningful way.

Vocabulary

Children’s command of vocabulary is fundamental to learning and progress across the curriculum. Vocabulary is developed actively, building systematically on pupil’s current knowledge and deepening their understanding of etymology and morphology (word origins and structures) to increase their store of words. Simultaneously, pupils make links between known and new vocabulary, and discuss and apply shades of meaning. In this way, children expand the vocabulary choices that are available to them. It is essential to introduce technical vocabulary which define each curriculum subject. Vocabulary development is underpinned by an oracy culture and a tiered approach. High value is placed on the conscious, purposeful selection of well-chosen vocabulary and appropriate sentence structure to enrich access to learning and feed into written work across the curriculum.

KS1 D&T Vocabulary List

Design	Assemble, join & combine	Hygiene/hygienically
sew	running stitch	pin
attach	safety pin	thread
Product	Food plant names	Intended user
Idea	Animals that produce/give food	Measure, mark out

Template	Names of different food ingredients	Mock-up
Labelled diagrams	Structures	Finishing techniques
Names of different materials & textiles	Names of tools for cutting, peeling and grating	Slider, lever, hinge
Eatwell Plate – fruit and vegetables, potatoes, bread, rice, pasta and other starchy carbohydrates, beans, pulses, fish, eggs, meat and other proteins, dairy and alternatives, oils and spreads		Wheel, axel & chassis

KS2 D&T Vocabulary List

Purpose	Levers and linkages	Electrical circuits, switches, buzzers
Design features	Pneumatic systems	Programming
Intended users	Movement	Structures: Reinforce and strengthen, stronger, stiffer and steadier.
Prototype	Healthy diet	Computer aided programmes: program, monitor and control
Mock-up	Cross-sectional drawing	Complex electrical circuits
Pattern piece	Cams, pulleys, gears	Motor, battery
Annotated sketches & diagrams	Recycled	Conductor, insulator
Design criteria	Reused	Crocodile clips
Components	Exploded diagram	needle
applique	tack	thread

The teaching of DT at Sparkwell follows the Kapow scheme of learning which has been designed as a spiral curriculum with the following key principles in mind:

- Cyclical: Pupils return to the key areas again and again during their time in primary school.
- Increasing depth: Each time a key area is revisited it is covered with greater complexity.
- Prior knowledge: Upon returning to each key area, prior knowledge is utilised so pupils can build upon previous foundations, rather than starting again.

. We believe that design and technology should always be about making and designing a product that is ‘something for someone for something’. In other words, we believe it should be about making and designing a product for a genuine purpose in a real life context. While making, children will be given independent design choices and guided about the most relevant tools for the task. Children will follow our scheme of learning which allows for evaluation of their finished product against a design criteria and builds on previous learning.



The National Curriculum

Key stage 1

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.

When designing and making, pupils should be taught to:

Design

§ design purposeful, functional, appealing products for themselves and other users based on design criteria

§ generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Make

§ select from an appropriate range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]

§ select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

Evaluate

§ explore and evaluate a range of existing products

§ evaluate their ideas and products against design criteria

Technical knowledge

§ build structures, exploring how they can be made stronger, stiffer and more stable

§ explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

Key stage 2

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.

When designing and making, pupils should be taught to:

Design

§ use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups

§ generate, develop, model and communicate their ideas through discussion, annotated sketches, prototypes, pattern pieces and computer-aided design

Make

§ select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately

§ select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluate

§ investigate and analyse a range of existing products

§ evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

§ understand how key events and individuals in design and technology have helped shape the world

Technical knowledge

§ apply their understanding of how to strengthen, stiffen and reinforce more complex structures

§ understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]

§ understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]

§ apply their understanding of computing to program, monitor and control their products.

Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

Key stage 1

§ use the basic principles of a healthy and varied diet to prepare dishes

§ understand where food comes from.

Key stage 2

§ understand and apply the principles of a healthy and varied diet

§ prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques

§ understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

Progression of Key Skills

Key skills

In order to assess impact - a guide

Children will develop:

- An excellent attitude to learning and independent working.
- The ability to use time efficiently and work constructively and productively with others.
- The ability to carry out thorough research, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs.
- The ability to act as responsible designers and makers, working ethically, using finite materials carefully and working safely.
- A thorough knowledge of which tools, equipment and materials to use to make their products.
- The ability to apply mathematical, scientific and art and design knowledge and skills when designing and making products and use these skills accurately.
- The ability to consider and manage risk well to manufacture products safely and hygienically.
- A passion for the subject.
- • build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users and critique, evaluate and test their ideas and products and the work of others
- • understand and apply the principles of nutrition and learn how to cook. Children will design and make a range of products. A good quality finish will be expected in all design and activities made appropriate to the age and ability of the child.
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Assessment of children's learning in Design Technology is an ongoing monitoring of children's understanding, knowledge and skills by the class teacher and the DT subject leader. This assessment is then used to inform differentiation, support and challenge required by the children.